

Benedict Test The Benedict's test identifies reducing sugars (monosaccharide), which have free ketone or aldehyde functional groups. Some sugars such as glucose are called reducing sugars because they are capable of transferring hydrogens (electrons) to other compounds, a process called reduction. When reducing sugars are mixed with Benedict's reagent and heated, a reduction reaction causes the Benedict's reagent to change color. –All monosaccharide is reducing sugar since they have exposed carbonyl group –Some disaccharide have exposed carbonyl group so they are reducing sugar, other like sucrose are non-reducing sugar and will not react with Benedict's reagent –Large polymers of glucose such as starch are not reducing sugar

Objective to distinguish between reducing and non-reducing sugar – Benedict's test is specific for reducing sugar

Principle of Benedict's Test When Benedict's solution and simple carbohydrates are heated, the solution changes to orange red/ brick red. This reaction is caused by the reducing property of simple carbohydrates. The copper (II) ions in the Benedict's solution are reduced to Copper (I) ions, which causes the color change. The red copper(I) oxide formed is insoluble in water and is precipitated out of solution. This accounts for the precipitate formed.